



Measure Information

This document contains the information submitted by measure developers/stewards, but is organized according to NQF's measure evaluation criteria and process. The item numbers refer to those in the submission form but may be in a slightly different order here. In general, the item numbers also reference the related criteria (e.g., item 1b.1 relates to sub criterion 1b).

Brief Measure Information

NQF #: 0467

Corresponding Measures:

De.2. Measure Title: Acute Stroke Mortality Rate (IQI 17)

Co.1.1. Measure Steward: Agency for Healthcare Research and Quality

De.3. Brief Description of Measure: In-hospital deaths per 1,000 hospital discharges with acute stroke as a principal diagnosis for patients ages 18 years and older. Includes metrics for discharges grouped by type of stroke. Excludes obstetric discharges and transfers to another hospital.

[NOTE: The software provides the rate per hospital discharge. However, common practice reports the measure as per 1,000 discharges. The user must multiply the rate obtained from the software by 1,000 to report in-hospital deaths per 1,000 hospital discharges.]

1b.1. Developer Rationale: Providers may adopt the processes of care or structures of care of the best performing providers or consumers may select the best performing providers in order to improve overall outcomes

S.4. Numerator Statement: Overall:

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.

Stratum A (Subarachnoid hemorrhage):

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.

Stratum B (Intracerebral hemorrhage) :

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.

Stratum C (Ischemic stroke):

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.

S.6. Denominator Statement: Overall:

Discharges, for patients ages 18 years and older, with a principal ICD-9-CM diagnosis code for subarachnoid hemorrhage or a principal ICD-9-CM diagnosis code for intracerebral hemorrhage or a principal ICD-9-CM diagnosis code for ischemic stroke.

S.8. Denominator Exclusions: Overall:

Exclude cases:

- transferring to another short-term hospital (DISP=2)
- MDC 14 (pregnancy, childbirth, and puerperium)
- with missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1=missing)

Stratum A (Subarachnoid hemorrhage):

Exclude cases:

- transferring to another short-term hospital (DISP=2)
- MDC 14 (pregnancy, childbirth, and puerperium)
- with missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1=missing)

Stratum B (Intracerebral hemorrhage) :

Exclude cases:

- transferring to another short-term hospital (DISP=2)
- MDC 14 (pregnancy, childbirth, and puerperium)
- with missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1=missing)

Stratum C (Ischemic stroke):

Exclude cases:

- transferring to another short-term hospital (DISP=2)
- MDC 14 (pregnancy, childbirth, and puerperium)
- with missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1=missing)

De.1. Measure Type: Outcome

S.17. Data Source: Claims

S.20. Level of Analysis: Facility

IF Endorsement Maintenance – Original Endorsement Date: Jun 23, 2008 Most Recent Endorsement Date: Nov 01, 2012

IF this measure is included in a composite, NQF Composite#/title:

IF this measure is paired/grouped, NQF#/title:

De.4. IF PAIRED/GROUPED, what is the reason this measure must be reported with other measures to appropriately interpret results? Mortality for Selected Conditions composite (NQF #0530)

1. Evidence, Performance Gap, Priority – Importance to Measure and Report

Extent to which the specific measure focus is evidence-based, important to making significant gains in healthcare quality, and improving health outcomes for a specific high-priority (high-impact) aspect of healthcare where there is variation in or overall less-than-optimal performance. **Measures must be judged to meet all sub criteria to pass this criterion and be evaluated against the remaining criteria.**

1a. Evidence to Support the Measure Focus – See attached Evidence Submission Form

0467_Evidence_MSF5.0_Data.doc

1a.1 For Maintenance of Endorsement: Is there new evidence about the measure since the last update/submission?

Do not remove any existing information. If there have been any changes to evidence, the Committee will consider the new evidence. Please use the most current version of the evidence attachment (v7.1). Please use red font to indicate updated evidence.

1b. Performance Gap

Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating:

- considerable variation, or overall less-than-optimal performance, in the quality of care across providers; and/or
- Disparities in care across population groups.

1b.1. Briefly explain the rationale for this measure (e.g., how the measure will improve the quality of care, the benefits or improvements in quality envisioned by use of this measure)

If a COMPOSITE (e.g., combination of component measure scores, all-or-none, any-or-none), SKIP this question and answer the composite questions.

Providers may adopt the processes of care or structures of care of the best performing providers or consumers may select the best performing providers in order to improve overall outcomes

1b.2. Provide performance scores on the measure as specified (current and over time) at the specified level of analysis. (*This is required for maintenance of endorsement. Include mean, std dev, min, max, interquartile range, scores by decile. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities include.*) This information also will be used to address the sub-criterion on improvement (4b1) under Usability and Use.

Risk-adjustment mortality varies widely across different types of hospitals, with lower mortality at teaching hospitals compared with nonteaching hospitals, at large hospitals compared with small hospitals, and at metropolitan hospitals compared with nonmetropolitan hospitals.

In regard to figures below:

1st figure: estimate per 1,000, risk adjusted rates

2nd figure: standard error

3rd figure: p value relative to marked group (marked group = "c")

4th figure: p value: current year relative to prior year

Key:

"c": Reference for p-value test statistics

"*": Data do not meet criteria for statistical reliability, data quality, or confidentiality

Hospital characteristic:

Location of inpatient treatment:

Northeastc	87.215	0.718	cccc	0.000
Midwest	76.462	0.693	0.000	0.000
South	80.984	0.513	0.000	0.000
West	78.771	0.677	0.000	0.000

Ownership/control:

Private, not-for-profitc	79.151	0.368	cccc	0.000
Private, for-profit	81.439	0.864	0.015	0.000
Public	89.139	0.879	0.000	0.000

Teaching status:

Teaching	75.137	0.501	0.000	0.000
Nonteachingc	84.217	0.407	cccc	0.000

Location of hospital (NCHS):

Large central metropolitan	72.838	0.496	0.000	0.000
Large fringe metropolitan	78.814	0.742	cccc	0.000
Medium metropolitan	81.722	0.633	0.003	0.000
Small metropolitan	89.309	1.030	0.000	0.000
Micropolitan	104.120	1.346	0.000	0.000
Noncore	136.695	2.606	0.000	0.008

Bed size of hospital:

Less than 100	118.894	1.421	0.000	0.000
100 - 299c	81.335	0.587	cccc	0.000
300 - 499	78.276	0.556	0.000	0.000
500 or more	75.785	0.542	0.000	0.000

The citation for the data source is reported in section "1b.3. Citations for Data on Performance Gap." The source is Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009, and AHRQ Quality Indicators, modified version of 4.1. The Nationwide Inpatient Sample (NIS) is a stratified sample of 20% of community hospitals. The data in the table reflect a denominator of 104,056 patients in 804 facilities.

1b.3. If no or limited performance data on the measure as specified is reported in 1b2, then provide a summary of data from the literature that indicates opportunity for improvement or overall less than optimal performance on the specific focus of measurement.

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009, and AHRQ Quality Indicators, modified version of 4.1.

1b.4. Provide disparities data from the measure as specified (current and over time) by population group, e.g., by race/ethnicity, gender, age, insurance status, socioeconomic status, and/or disability. (*This is required for maintenance of endorsement. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included.*) For measures that show high levels of performance, i.e., "topped out", disparities data may demonstrate an opportunity

for improvement/gap in care for certain sub-populations. This information also will be used to address the sub-criterion on improvement (4b1) under Usability and Use.

Note that risk-adjusted mortality is higher in low-income communities compared with high-income communities, in nonmetropolitan communities compared with metropolitan communities, and among uninsured patients compared with insured patients (with either public or private insurance).

In regard to figures below:

1st figure: estimate per 1,000, risk adjusted rates

2nd figure: standard error

3rd figure: p value relative to marked group (marked group = "c")

4th figure: p value: current year relative to prior year

Key:

"c": Reference for p-value test statistics

"*": Data do not meet criteria for statistical reliability, data quality, or confidentiality

Patient characteristic:

Median income of patient's ZIP code:

First quartile (lowest income)	82.544	0.600	0.000	0.000
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Second quartile	82.305	0.622	0.000	0.000
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Third quartile	80.280	0.645	0.001	0.000
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Fourth quartile (highest income)c	77.116	0.669	CCCC	0.000
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Location of patient residence (NCHS):

Large central metropolitan	73.260	0.563	0.000	0.000
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Large fringe metropolitan	76.975	0.656	CCCC	0.000
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Medium metropolitan	82.240	0.701	0.000	0.000
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Small metropolitan	87.951	1.086	0.000	0.000
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Micropolitan	91.478	0.989	0.000	0.000
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Noncore	98.301	1.266	0.000	0.000
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Expected payment source:

Private insurancec	84.772	0.759	CCCC	0.000
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Medicare	76.964	0.380	0.000	0.000
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Medicaid	78.023	1.211	0.000	0.000
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Other insurance	129.371	2.168	0.000	0.926
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Uninsured / self-pay / no charge	104.916	1.467	0.000	0.126
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1b.5. If no or limited data on disparities from the measure as specified is reported in 1b.4, then provide a summary of data from the literature that addresses disparities in care on the specific focus of measurement. Include citations. Not necessary if performance data provided in 1b.4

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2009, and AHRQ Quality Indicators, modified version of 4.1.

2. Reliability and Validity—Scientific Acceptability of Measure Properties

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. **Measures must be judged to meet the sub criteria for both reliability and validity to pass this criterion and be evaluated against the remaining criteria.**

2a.1. Specifications The measure is well defined and precisely specified so it can be implemented consistently within and across organizations and allows for comparability. eMeasures should be specified in the Health Quality Measures Format (HQMF) and the Quality Data Model (QDM).

De.5. Subject/Topic Area (check all the areas that apply):

Neurology, Neurology : Stroke/Transient Ischemic Attack (TIA)

De.6. Non-Condition Specific(check all the areas that apply):

De.7. Target Population Category (Check all the populations for which the measure is specified and tested if any):

Elderly

S.1. Measure-specific Web Page (Provide a URL link to a web page specific for this measure that contains current detailed specifications including code lists, risk model details, and supplemental materials. Do not enter a URL linking to a home page or to general information.)

<http://www.qualityindicators.ahrq.gov/Downloads/Modules/IQI/V45/TechSpecs/IQI%2017%20Acute%20Stroke%20Mortality%20Rate.pdf>

S.2a. If this is an eMeasure, HQMF specifications must be attached. Attach the zipped output from the eMeasure authoring tool (MAT) - if the MAT was not used, contact staff. (Use the specification fields in this online form for the plain-language description of the specifications)

[This is not an eMeasure](#) Attachment:

S.2b. Data Dictionary, Code Table, or Value Sets (and risk model codes and coefficients when applicable) must be attached. (Excel or csv file in the suggested format preferred - if not, contact staff)

Attachment Attachment: [IQI_Regression_Coefficients-_Code_Tables_and_Value_Sets.xlsx](#)

S.2c. Is this an instrument-based measure (i.e., data collected via instruments, surveys, tools, questionnaires, scales, etc.)? Attach copy of instrument if available.

Attachment:

S.2d. Is this an instrument-based measure (i.e., data collected via instruments, surveys, tools, questionnaires, scales, etc.)? Attach copy of instrument if available.

S.3.1. For maintenance of endorsement: Are there changes to the specifications since the last updates/submission. If yes, update the specifications for S1-2 and S4-22 and explain reasons for the changes in S3.2.

S.3.2. For maintenance of endorsement, please briefly describe any important changes to the measure specifications since last measure update and explain the reasons.

S.4. Numerator Statement (Brief, narrative description of the measure focus or what is being measured about the target population, i.e., cases from the target population with the target process, condition, event, or outcome) DO NOT include the rationale for the measure.

IF an OUTCOME MEASURE, state the outcome being measured. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

Overall:

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.

Stratum A (Subarachnoid hemorrhage):

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.

Stratum B (Intracerebral hemorrhage) :

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.

Stratum C (Ischemic stroke):

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.

S.5. Numerator Details (All information required to identify and calculate the cases from the target population with the target

process, condition, event, or outcome such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)

IF an OUTCOME MEASURE, describe how the observed outcome is identified/counted. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

Overall:

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.

Stratum A (Subarachnoid hemorrhage):

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.

Stratum B (Intracerebral hemorrhage) :

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.

Stratum C (Ischemic stroke):

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.

S.6. Denominator Statement (Brief, narrative description of the target population being measured)

Overall:

Discharges, for patients ages 18 years and older, with a principal ICD-9-CM diagnosis code for subarachnoid hemorrhage or a principal ICD-9-CM diagnosis code for intracerebral hemorrhage or a principal ICD-9-CM diagnosis code for ischemic stroke.

S.7. Denominator Details (All information required to identify and calculate the target population/denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)

IF an OUTCOME MEASURE, describe how the target population is identified. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

ICD-9-CM Subarachnoid hemorrhage diagnosis codes:

430 SUBARACHNOID HEMORRHAGE

ICD-9-CM Intracerebral hemorrhage diagnosis codes:

431 INTRACEREBRAL HEMORRHAGE

4320 NONTRAUM EXTRADURAL HEM

4321 SUBDURAL HEMORRHAGE

4329 INTRACRANIAL HEMORR NOS

ICD-9-CM Ischemic stroke diagnosis codes:

43301 BASI ART OCCL W/ INFARCT

43311 CAROTD OCCL W/ INFRCT

43321 VERTB ART OCCL W/ INFRCT

43331 MULT PRECER OCCL W/ INFRCT

43381 PRECER OCCL NEC W/ INFRCT

43391 PRECER OCCL NOS W/ INFRCT

43401 CERE THROMBOSIS W/ INFRCT

43411 CERE EMBOLISM W/ INFRCT

43491 CEREB OCCL NOS W/ INFRCT

Note: For discharges prior to September 30, 2014 (FY2004 or earlier), the following code is included in the overall denominator. This code is not included in any stratum.

436 CVA

[NOTE: Overall denominator may not match the sum of the strata denominators because the strata may not be mutually exclusive.]

Stratum A (Subarachnoid hemorrhage):

Discharges, for patients ages 18 years and older, with a principal ICD-9-CM diagnosis code for subarachnoid hemorrhage (see

above).

Stratum B (Intracerebral hemorrhage) :

Discharges, for patients ages 18 years and older, with a principal ICD-9-CM diagnosis code for intracerebral hemorrhage stroke (see above).

Stratum C (Ischemic stroke):

Discharges, for patients ages 18 years and older, with a principal ICD-9-CM diagnosis code for ischemic stroke (see above).

S.8. Denominator Exclusions *(Brief narrative description of exclusions from the target population)*

Overall:

Exclude cases:

- transferring to another short-term hospital (DISP=2)
- MDC 14 (pregnancy, childbirth, and puerperium)
- with missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1=missing)

Stratum A (Subarachnoid hemorrhage):

Exclude cases:

- transferring to another short-term hospital (DISP=2)
- MDC 14 (pregnancy, childbirth, and puerperium)
- with missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1=missing)

Stratum B (Intracerebral hemorrhage) :

Exclude cases:

- transferring to another short-term hospital (DISP=2)
- MDC 14 (pregnancy, childbirth, and puerperium)
- with missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1=missing)

Stratum C (Ischemic stroke):

Exclude cases:

- transferring to another short-term hospital (DISP=2)
- MDC 14 (pregnancy, childbirth, and puerperium)
- with missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1=missing)

S.9. Denominator Exclusion Details *(All information required to identify and calculate exclusions from the denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)*

Overall:

Exclude cases:

- transferring to another short-term hospital (DISP=2)
- MDC 14 (pregnancy, childbirth, and puerperium)
- with missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1=missing)

Stratum A (Subarachnoid hemorrhage):

Exclude cases:

- transferring to another short-term hospital (DISP=2)
- MDC 14 (pregnancy, childbirth, and puerperium)
- with missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1=missing)

Stratum B (Intracerebral hemorrhage) :

Exclude cases:

- transferring to another short-term hospital (DISP=2)
- MDC 14 (pregnancy, childbirth, and puerperium)
- with missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1=missing)

Stratum C (Ischemic stroke):

Exclude cases:

- transferring to another short-term hospital (DISP=2)
- MDC 14 (pregnancy, childbirth, and puerperium)
- with missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1=missing)

S.10. Stratification Information *(Provide all information required to stratify the measure results, if necessary, including the stratification variables, definitions, specific data collection items/responses, code/value sets, and the risk-model covariates and coefficients for the clinically-adjusted version of the measure when appropriate – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format with at S.2b.)*

The indicator is stratified into three groups by the type of stroke:

Cases are assigned to strata according to a hierarchy based on mortality, with cases being assigned to the stratum with the highest mortality for which the case qualifies. In the case of Stroke Mortality the current hierarchy is as follows:

Strata hierarchy (listed from highest mortality to lowest mortality):

1. Stratum B (Intracerebral hemorrhage)
2. Stratum A (Subarachnoid hemorrhage)
3. Stratum C (Ischemic stroke)

S.11. Risk Adjustment Type (Select type. Provide specifications for risk stratification in measure testing attachment)

Statistical risk model

If other:

S.12. Type of score:

Rate/proportion

If other:

S.13. Interpretation of Score *(Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score)*

Better quality = Lower score

S.14. Calculation Algorithm/Measure Logic *(Diagram or describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; time period for data, aggregating data; risk adjustment; etc.)*

The indicator is expressed as a rate, defined as outcome of interest / population at risk or numerator / denominator. The AHRQ Quality Indicators (AHRQ QI) software performs six steps to produce the rates. 1) Discharge-level records are flagged to identify the outcome of interest and 2) the population at risk. 3) Calculate observed rates as the sum of the records flagged in the numerator divided by the sum of the records flag in the denominator for user-specified combinations of stratifiers. 4) Calculate expected rates. Regression coefficients from a reference population database are applied to the discharge records to compute a predicted value. For indicators that are not risk-adjusted, this is the reference population rate. The expected rate is computed as the sum of the predicted value for each record divided by the number of records flagged in the population at risk for the unit of analysis of interest (i.e., hospital). 5) Calculate risk-adjusted rate using indirect standardization as the observed rate divided by the expected rate, multiplied by the reference population rate. For indicators that are not risk-adjusted, this is the same as the observed rate. 6) Calculate smoothed rate using an Empirical Bayes shrinkage estimator (W) as the weighted average of the risk-adjusted rate and the reference population rate. The shrinkage estimate reflects a reliability adjustment unique to each indicator.

S.15. Sampling *(If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample*

size.)

IF an instrument-based performance measure (e.g., PRO-PM), identify whether (and how) proxy responses are allowed.

Not applicable

S.16. Survey/Patient-reported data (If measure is based on a survey or instrument, provide instructions for data collection and guidance on minimum response rate.)

Specify calculation of response rates to be reported with performance measure results.

S.17. Data Source (Check ONLY the sources for which the measure is SPECIFIED AND TESTED).

If other, please describe in S.18.

Claims

S.18. Data Source or Collection Instrument (Identify the specific data source/data collection instrument (e.g. name of database, clinical registry, collection instrument, etc., and describe how data are collected.)

IF instrument-based, identify the specific instrument(s) and standard methods, modes, and languages of administration.

HCUP State Inpatient Databases (SID). Healthcare Cost and Utilization Project (HCUP). Agency for Healthcare Research and Quality, Rockville, MD.

S.19. Data Source or Collection Instrument (available at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)

URL

S.20. Level of Analysis (Check ONLY the levels of analysis for which the measure is SPECIFIED AND TESTED)

Facility

S.21. Care Setting (Check ONLY the settings for which the measure is SPECIFIED AND TESTED)

Inpatient/Hospital

If other:

S.22. COMPOSITE Performance Measure - Additional Specifications (Use this section as needed for aggregation and weighting rules, or calculation of individual performance measures if not individually endorsed.)

2. Validity – See attached Measure Testing Submission Form

0467_MeasureTesting_MS5.0_Data.doc

2.1 For maintenance of endorsement

Reliability testing: If testing of reliability of the measure score was not presented in prior submission(s), has reliability testing of the measure score been conducted? If yes, please provide results in the Testing attachment. Please use the most current version of the testing attachment (v7.1). Include information on all testing conducted (prior testing as well as any new testing); use red font to indicate updated testing.

2.2 For maintenance of endorsement

Has additional empirical validity testing of the measure score been conducted? If yes, please provide results in the Testing attachment. Please use the most current version of the testing attachment (v7.1). Include information on all testing conducted (prior testing as well as any new testing); use red font to indicate updated testing.

2.3 For maintenance of endorsement

Risk adjustment: For outcome, resource use, cost, and some process measures, risk-adjustment that includes social risk factors is not prohibited at present. Please update sections 1.8, 2a2, 2b1, 2b4.3 and 2b5 in the Testing attachment and S.140 and S.11 in the online submission form. NOTE: These sections must be updated even if social risk factors are not included in the risk-adjustment strategy. You MUST use the most current version of the Testing Attachment (v7.1) -- older versions of the form will not have all required questions.

3. Feasibility

Extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

3a. Byproduct of Care Processes

For clinical measures, the required data elements are routinely generated and used during care delivery (e.g., blood pressure, lab test, diagnosis, medication order).

3a.1. Data Elements Generated as Byproduct of Care Processes.

Coded by someone other than person obtaining original information (e.g., DRG, ICD-9 codes on claims)

If other:

3b. Electronic Sources

The required data elements are available in electronic health records or other electronic sources. If the required data are not in electronic health records or existing electronic sources, a credible, near-term path to electronic collection is specified.

3b.1. To what extent are the specified data elements available electronically in defined fields (i.e., data elements that are needed to compute the performance measure score are in defined, computer-readable fields) Update this field for maintenance of endorsement.

ALL data elements are in defined fields in electronic claims

3b.2. If ALL the data elements needed to compute the performance measure score are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources. For maintenance of endorsement, if this measure is not an eMeasure (eCQM), please describe any efforts to develop an eMeasure (eCQM).

3b.3. If this is an eMeasure, provide a summary of the feasibility assessment in an attached file or make available at a measure-specific URL. Please also complete and attach the NQF Feasibility Score Card.

Attachment:

3c. Data Collection Strategy

Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, costs associated with fees/licensing of proprietary measures) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use). For eMeasures, a feasibility assessment addresses the data elements and measure logic and demonstrates the eMeasure can be implemented or feasibility concerns can be adequately addressed.

3c.1. Required for maintenance of endorsement. Describe difficulties (as a result of testing and/or operational use of the measure) regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues.

IF instrument-based, consider implications for both individuals providing data (patients, service recipients, respondents) and those whose performance is being measured.

Administrative data are collected as part of the routine operations. Some staff time is required to download and execute the software from the AHRQ webs site, which is available at no cost. The AHRQ QI software has been publicly available at no cost since 2001; Users have over ten years of experience using the AHRQ QI software in SAS and Windows.

3c.2. Describe any fees, licensing, or other requirements to use any aspect of the measure as specified (e.g., value/code set, risk model, programming code, algorithm).

4. Usability and Use

Extent to which potential audiences (e.g., consumers, purchasers, providers, policy makers) are using or could use performance

results for both accountability and performance improvement to achieve the goal of high-quality, efficient healthcare for individuals or populations.

4a. Accountability and Transparency

Performance results are used in at least one accountability application within three years after initial endorsement and are publicly reported within six years after initial endorsement (or the data on performance results are available). If not in use at the time of initial endorsement, then a credible plan for implementation within the specified timeframes is provided.

4.1. Current and Planned Use

NQF-endorsed measures are expected to be used in at least one accountability application within 3 years and publicly reported within 6 years of initial endorsement in addition to performance improvement.

Specific Plan for Use	Current Use (for current use provide URL)

4a1.1 For each CURRENT use, checked above (update for maintenance of endorsement), provide:

- Name of program and sponsor
- Purpose
- Geographic area and number and percentage of accountable entities and patients included
- Level of measurement and setting

4a1.2. If not currently publicly reported OR used in at least one other accountability application (e.g., payment program, certification, licensing) what are the reasons? (e.g., Do policies or actions of the developer/steward or accountable entities restrict access to performance results or impede implementation?)

4a1.3. If not currently publicly reported OR used in at least one other accountability application, provide a credible plan for implementation within the expected timeframes -- any accountability application within 3 years and publicly reported within 6 years of initial endorsement. (Credible plan includes the specific program, purpose, intended audience, and timeline for implementing the measure within the specified timeframes. A plan for accountability applications addresses mechanisms for data aggregation and reporting.)

4a2.1.1. Describe how performance results, data, and assistance with interpretation have been provided to those being measured or other users during development or implementation.

How many and which types of measured entities and/or others were included? If only a sample of measured entities were included, describe the full population and how the sample was selected.

4a2.1.2. Describe the process(es) involved, including when/how often results were provided, what data were provided, what educational/explanatory efforts were made, etc.

4a2.2.1. Summarize the feedback on measure performance and implementation from the measured entities and others described in 4d.1.

Describe how feedback was obtained.

4a2.2.2. Summarize the feedback obtained from those being measured.

4a2.2.3. Summarize the feedback obtained from other users

4a2.3. Describe how the feedback described in 4a2.2.1 has been considered when developing or revising the measure specifications or implementation, including whether the measure was modified and why or why not.

Improvement

Progress toward achieving the goal of high-quality, efficient healthcare for individuals or populations is demonstrated. If not in use for performance improvement at the time of initial endorsement, then a credible rationale describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

4b1. Refer to data provided in 1b but do not repeat here. Discuss any progress on improvement (trends in performance results, number and percentage of people receiving high-quality healthcare; Geographic area and number and percentage of accountable entities and patients included.)

If no improvement was demonstrated, what are the reasons? If not in use for performance improvement at the time of initial endorsement, provide a credible rationale that describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

4b2. Unintended Consequences

The benefits of the performance measure in facilitating progress toward achieving high-quality, efficient healthcare for individuals or populations outweigh evidence of unintended negative consequences to individuals or populations (if such evidence exists).

4b2.1. Please explain any unexpected findings (positive or negative) during implementation of this measure including unintended impacts on patients.

[Coding professionals follow detail guidelines, are subject to training and credentialing requirements, peer review and audit](#)

4b2.2. Please explain any unexpected benefits from implementation of this measure.

5. Comparison to Related or Competing Measures

If a measure meets the above criteria and there are endorsed or new related measures (either the same measure focus or the same target population) or competing measures (both the same measure focus and the same target population), the measures are compared to address harmonization and/or selection of the best measure.

5. Relation to Other NQF-endorsed Measures

Are there related measures (conceptually, either same measure focus or target population) or competing measures (conceptually both the same measure focus and same target population)? If yes, list the NQF # and title of all related and/or competing measures.
[Yes](#)

5.1a. List of related or competing measures (selected from NQF-endorsed measures)

0240 : [Stroke and Stroke Rehabilitation: Venous Thromboembolism \(VTE\) Prophylaxis for Ischemic Stroke or Intracranial Hemorrhage](#)

0241 : [Stroke and Stroke Rehabilitation: Anticoagulant Therapy Prescribed for Atrial Fibrillation \(AF\) at Discharge](#)

0242 : [Stroke and Stroke Rehabilitation: Tissue Plasminogen Activator \(t-PA\) Considered](#)

0243 : [Stroke and Stroke Rehabilitation: Screening for Dysphagia](#)

0244 : [Stroke and Stroke Rehabilitation: Rehabilitation Services Ordered](#)

0325 : [Stroke and Stroke Rehabilitation: Discharged on Antithrombotic Therapy](#)

0434 : [STK-01: Venous Thromboembolism \(VTE\) Prophylaxis](#)

0435 : [STK 02: Discharged on Antithrombotic Therapy](#)

0436 : [STK-03: Anticoagulation Therapy for Atrial Fibrillation/Flutter](#)

0437 : [STK 04: Thrombolytic Therapy](#)

0438 : [STK 05: Antithrombotic Therapy By End of Hospital Day Two](#)

0439 : [STK-06: Discharged on Statin Medication](#)

0440 : [STK-08: Stroke Education](#)

0441 : [STK-10: Assessed for Rehabilitation](#)

0442 : Functional Communication Measure: Writing
0443 : Functional Communication Measure: Swallowing
0444 : Functional Communication Measure: Spoken Language Expression
0445 : Functional Communication Measure: Spoken Language Comprehension
0446 : Functional Communication Measure: Reading
0448 : Functional Communication Measure: Memory
0449 : Functional Communication Measure: Attention
0661 : Head CT or MRI Scan Results for Acute Ischemic Stroke or Hemorrhagic Stroke Patients who Received Head CT or MRI Scan Interpretation within 45 minutes of ED Arrival
0705 : Proportion of Patients Hospitalized with Stroke that have a Potentially Avoidable Complication (during the Index Stay or in the 30-day Post-Discharge Period)

5.1b. If related or competing measures are not NQF endorsed please indicate measure title and steward.

5a. Harmonization of Related Measures

The measure specifications are harmonized with related measures;

OR

The differences in specifications are justified

5a.1. If this measure conceptually addresses EITHER the same measure focus OR the same target population as NQF-endorsed measure(s):

Are the measure specifications harmonized to the extent possible?

No

5a.2. If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden.

All but one of the related endorsed measures are measures of the process of care for patients with stroke. Therefore, these measures have similar target populations but different measure foci. The lone endorsed outcome measure other than this measure includes a wide variety of potentially avoidable complications. Due to the large number of related measures and incomplete specifications currently available online, we are currently contacting measure developers for additional information to assess and promote harmonization when possible. Comparing the denominator criterion for this measure with the denominator criteria for STK measures from The Joint Commission, there are minor differences. The AHRQ specification includes all ischemic and hemorrhagic infarcts. The Joint Commission specification adds 433.10 (carotid occlusion without infarct) and 434.00 (cerebral thrombosis without infarct), and it drops intracranial hemorrhagic infarcts without specified subarachnoid or intracerebral hemorrhage (e.g., 432.x). AHRQ believes that these differences are justified, but they comprise less than 5% of the total denominator, which would make harmonization potentially appropriate. The AMA-PCPI measures for Stroke and Stroke Rehabilitation also exclude hemorrhagic infarcts other than intracerebral hemorrhages, and they include selected TIA (435.9) and late effects (438.2, 438.89, 438.9) codes, which would not be appropriate for an inpatient mortality measure.

5b. Competing Measures

The measure is superior to competing measures (e.g., is a more valid or efficient way to measure);

OR

Multiple measures are justified.

5b.1. If this measure conceptually addresses both the same measure focus and the same target population as NQF-endorsed measure(s):

Describe why this measure is superior to competing measures (e.g., a more valid or efficient way to measure quality); OR provide a rationale for the additive value of endorsing an additional measure. (Provide analyses when possible.)

Not applicable.

Appendix

A.1 Supplemental materials may be provided in an appendix. All supplemental materials (such as data collection instrument or methodology reports) should be organized in one file with a table of contents or bookmarks. If material pertains to a specific

submission form number, that should be indicated. Requested information should be provided in the submission form and required attachments. There is no guarantee that supplemental materials will be reviewed.

Attachment **Attachment:** [0467_Deliverable_28_QI_Empirical_Methods_v50_20141216.docx](#)

Contact Information

Co.1 Measure Steward (Intellectual Property Owner): Agency for Healthcare Research and Quality

Co.2 Point of Contact: Pamela, Owens, Pam.Owens@ahrq.hhs.gov, 301-427-1412-

Co.3 Measure Developer if different from Measure Steward: Agency for Healthcare Research and Quality

Co.4 Point of Contact: John, Bott, John.Bott@ahrq.hhs.gov, 301-427-1317-

Additional Information

Ad.1 Workgroup/Expert Panel involved in measure development

Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.

[As listed in the technical report:](#)

http://qualityindicators.ahrq.gov/Downloads/Modules/IQI/iqi_development.zip

Measure Developer/Steward Updates and Ongoing Maintenance

Ad.2 Year the measure was first released: [2002](#)

Ad.3 Month and Year of most recent revision: [03, 2012](#)

Ad.4 What is your frequency for review/update of this measure? [Annual](#)

Ad.5 When is the next scheduled review/update for this measure? [03, 2013](#)

Ad.6 Copyright statement: [Not applicable](#)

Ad.7 Disclaimers: [Not applicable](#)

Ad.8 Additional Information/Comments: [Not applicable](#)